

NOTES ON THE GENUS *THORELLIOLA* STRAND, 1942 (ARANEAE: SALTICIDAE)

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Genus *Thorelliola* Thorell, 1887 is studied. Five species are diagnosed, described and illustrated. Four of them, *T. biapophysis*, *T. glabra*, *T. javaensis*, *T. truncilonga*, are described as the new. Remarks on relationships and distribution are presented. □ *Thorelliola*, Indonesia, Papua New Guinea, Tahiti.

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Genus *Thorelliola* was established by Strand (1942) for *Thorellia ensifera* (Thorell). The type species was originally described as *Plexippus ensifer* Thorell, 1877 and then transferred into *Thorellia* by Keyserling (1882). The latter generic name was, however, preoccupied, thus *Thorelliola* is the present valid name. Simon (1901) included the genus (*Thorellia* at that time) into a group *Spilargeae* — together with *Eupalia* and *Spilargis*. Petrunkevich (1928) added six other genera, none of them related. According to Berry, Beatty & Prószyński (in prep.), body shape and genitalia structures of *Thorelliola* resemble *Euophrys* and related genera.

Males of *Thorelliola* are very distinctive for their 'horns' arising either from circular sockets on the clypeus or from a tip of a robust truncus. Such strange and extravagant structures are also found in genera *Padilla* Simon, *Allococalodes* Wanless and *Cocalodes* Pocock. According to Wanless & Lubin (1986) the structures are probably used during intra-specific ♂-♂ interactions. The same authors suggest that the horns in *Thorelliola* have evolved from the lower of two setae, that form part of a triad of stiff setae on the clypeus in many salticids. The function of the horns in *Thorelliola* seems still unknown. Since there are no pores on any part of them, they cannot be used for dispersing pheromones, moreover, there is no evidence of any spider being injured by horns of another spider (Jackson & Whitehouse, 1982), so these structures cannot be the weapons. Zabka (1988) suggests that the protruding spines may work as stridulatory organs together with the corresponding palpal spines.

MATERIAL AND METHODS

Material from Indonesia and Tahiti, from Dr C.L. Deeleman-Reinhold's collection and speci-

mens collected by D.J. Court from Papua New Guinea are deposited in the Queensland Museum, Brisbane (QM). Comparative material from Singapore and Sulawesi (Indonesia) was borrowed from the Naturhistoriska Riksmuseet, Stockholm (NRS). Measurements are given in millimetres. The drawings were made using a grid system. Dissected epigynes were digested in lactic acid. Abbreviations used are: AEW = anterior eye row width, ag = accessory gland, AL = abdominal length, CH = cephalothorax height, CL = cephalothorax length, CW = cephalothorax width, e = embolus, EFL = eye field length, fd = fertilisation duct, h = horn, id = insemination duct, la = lateral appendix, PEW = posterior eye row width, pta = prolateral tibial apophysis, rta = retrolateral tibial apophysis, s = spermatheca, sd = seminal duct, t = truncus.

Order ARANEAE
Family SALTICIDAE

Thorelliola Strand, 1942

Thorellia Keyserling, 1882: 1353.

Thorelliola Strand, 1942: 400; Prószyński, 1984: 148; Zabka, 1988: 470-471; Jackson & Whitehouse, 1989: 1-16; Koh, 1989: 118.

DIAGNOSIS. Small spiders (3.5-5.0) with relatively high cephalothorax. Abdomen nearly round; legs rather robust and long (IV the longest). ♂ ♂ with horns or a truncus on the clypeus, in ♀ ♀ two smaller and more delicate setae.

DESCRIPTION. Cephalothorax longer than wide. Clypeus low. Cephalothorax usually yellow-beige to brown, posteriorly darker. Abdomen oval, light with grey-black pattern, covered with shiny scales. Chelicerae with two prolateral teeth and one retrolateral fissidentate tooth, with mul-

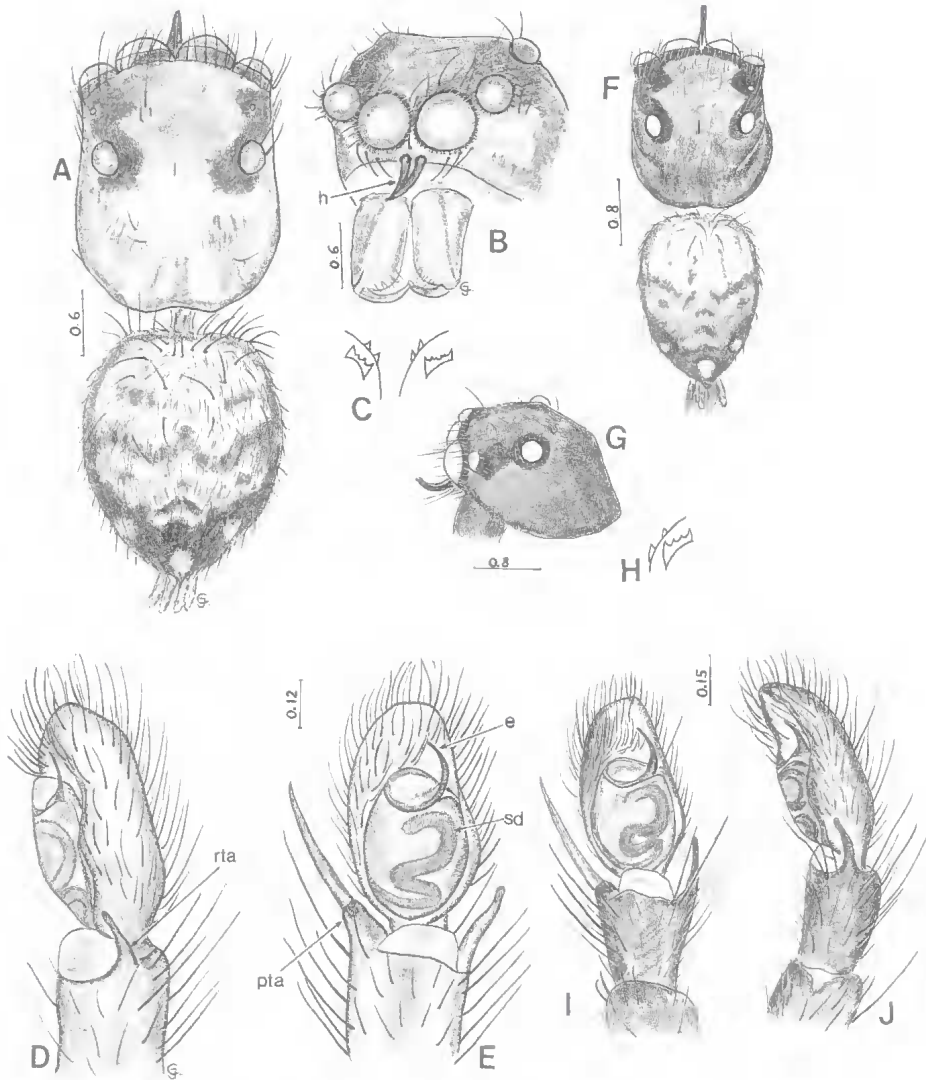


FIG. 1. *Thorelliola ensifera*, ♂♂. A-E, from Bali. F-J, comparative material from Singapore. A-B, F-G, general views. C, H, cheliceral teeth. D-E, I-J, palpal organs (lateral and ventral views).

tiple cusps. External margins of ♂ chelicerae with a lateral cusp. Maxillae and labium not distinctive, sternum heart-shaped. Legs relatively robust and long, yellow-brown with darker markings, especially near the joints. Leg formula: IV, III, I, II. Palpal organ simple, embolus counter-clockwise, weakly sclerotized. Epigyne, transverse oval, spermathecae more or less spherical; insemination ducts rather short, without loops.

DISTRIBUTION. Malaysia, Indonesia, Polynesia, Hawaii, Tahiti, Melanesia, Singapore, Papua New Guinea.

***Thorelliola ensifera* (Thorell, 1877)
(Figs 1-3)**

Plexippus ensifer Thorell, 1877: 606.

Thorellia ensifera Keyserling, 1882: 1353.

Thorelliola ensifera Strand, 1942: 400; Prószyński, 1984: 148; Wanless & Lubin, 1986: 1211, 1214; Zabka, 1988: 470-471; Jackson & Whitehouse, 1989: 1-16; Koh, 1989: 118.

MATERIAL EXAMINED. QMS35296, ♂, Bali: Sanur, 5.08.1992., C.L. Deeleman-Reinhold; QMS35297, ♀, North Sulawesi: Dumoga Bone National Park, near Doloduo, 27-30.07.1982; QMS35298, ♀, Tahiti, 1000m, 15.02.1985, C.L. Deeleman-Reinhold. **COMPARATIVE**

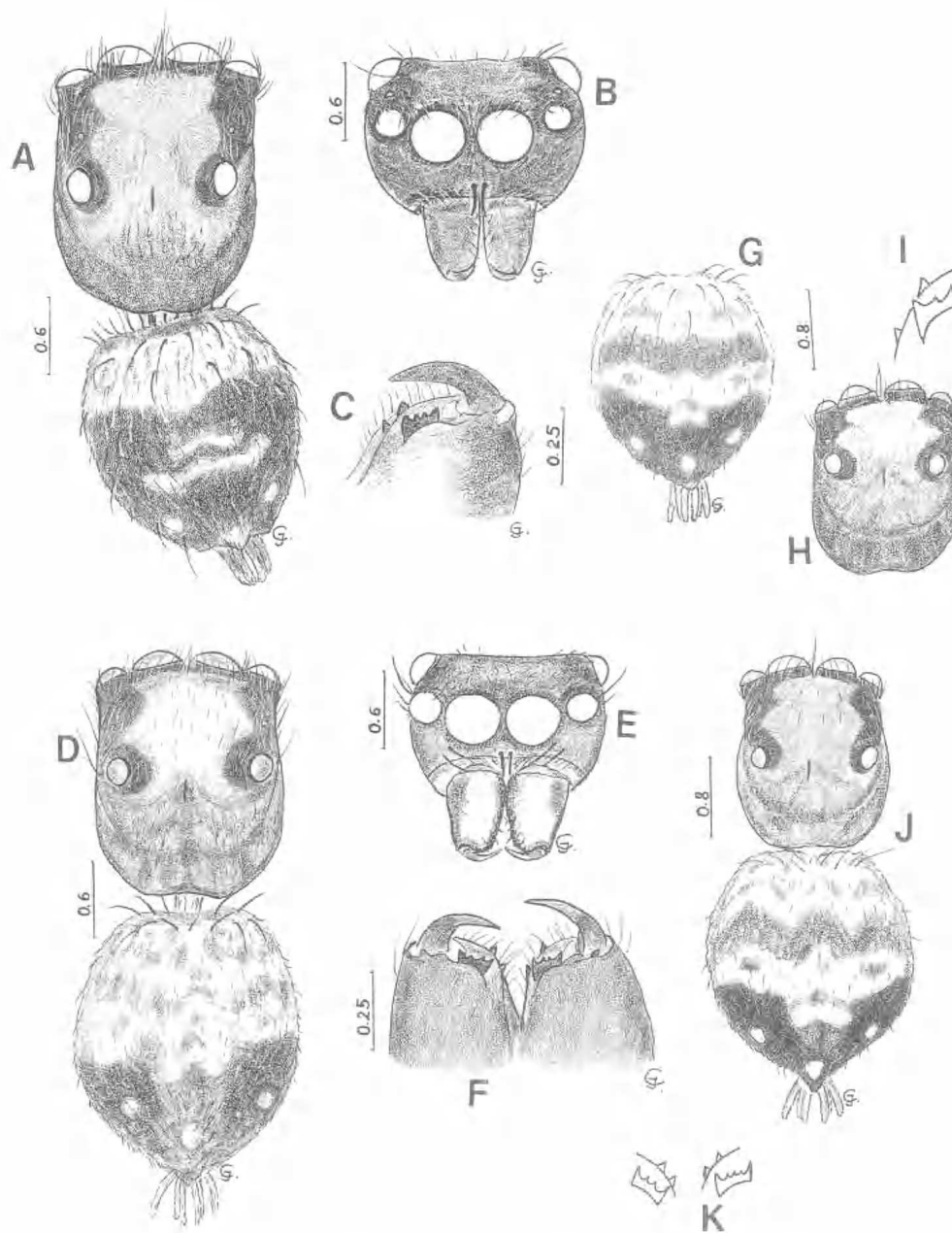


FIG. 2. *Thorelliola ensifera*, ♀♀. A-C, from Sulawesi. D-F, from Tahiti. G-I, comparative material from Sulawesi. J-K, comparative material from Singapore. A-B, D-E, G-H, J, general views. C, F, I, K, cheliceral teeth.

MATERIAL. NRS267/1806b, ♂, ♀, Singapore (Workman ded.), Thorell; NRS267/1806a, ♀, Sulawesi (Doria ded.), Thorell.

protruding on the clypeus, and by the shape of embolus and spermathecae. Abdomen with three white posterior spots.

COMPARISON. *T. ensifera* differs from the other species by the presence of two central horns

DESCRIPTION. Male. Cephalothorax (Fig. 1A-B) moderately tall, yellow-brown, covered with

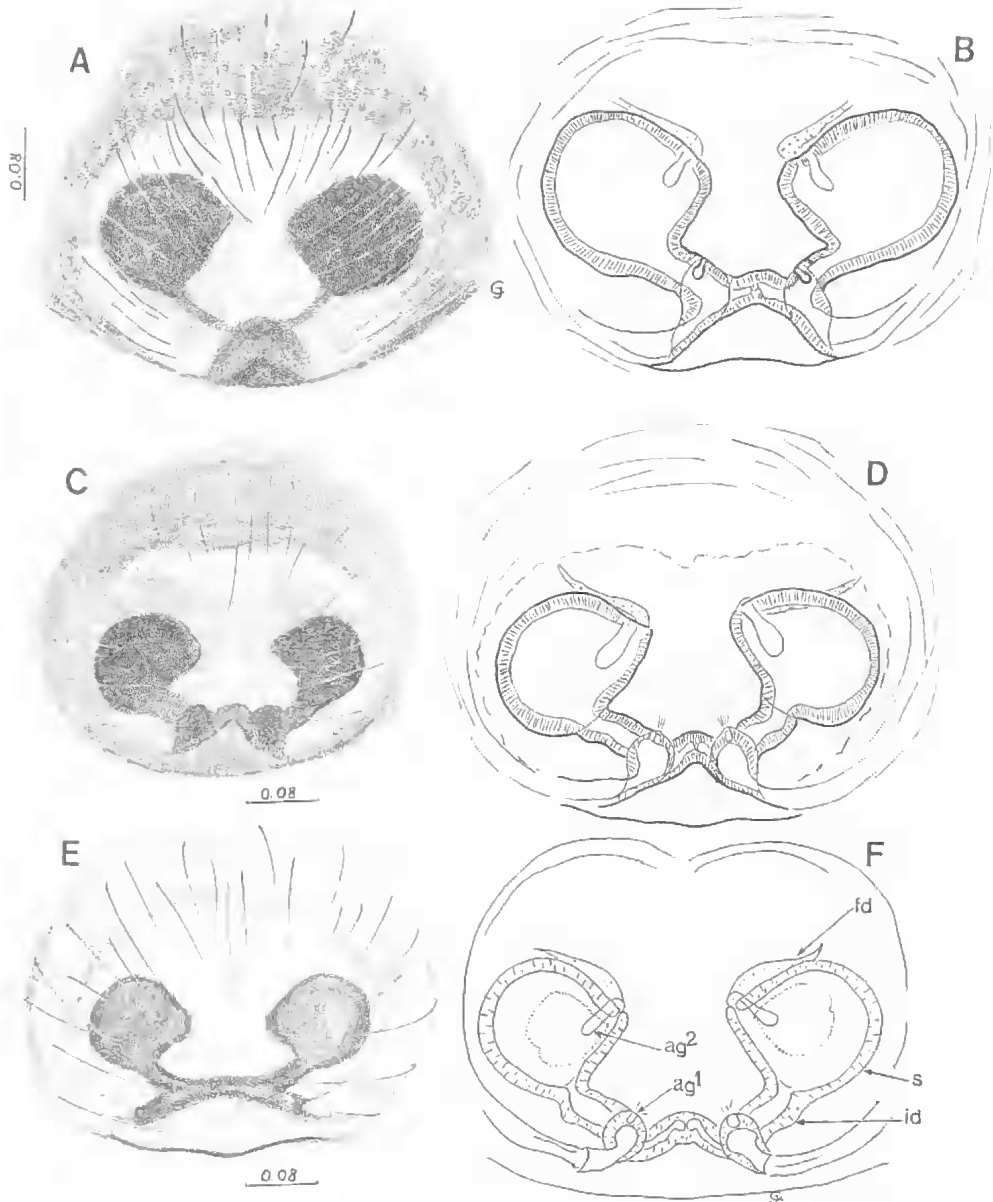


FIG. 3. *Thorelliola ensifera*, epigynes and its internal structures. A-B, from Sulawesi; C-D, from Tahiti; E-F, comparative material from Sulawesi.

dark hairs. Surroundings of eyes black with some dark, long and stiff hairs. Abdomen (Fig. 1A) oval, shiny and yellow, with pattern of black and gray markings and three whitish spots in front of spinnerets. Anterior part of abdomen with scattered protruding, long hairs. Spinnerets light yellow, with fine, dark hairs. Clypeus (Fig. 1B) low, pale brown with two large, distinctive setae

(horns) in the centre. Chelicerae (Fig. 1C), maxillae and labium yellow-beige. Sternum and coxae pale yellow. Legs yellow-grey, covered with numerous dark hairs and some spines. Venter light yellow with some black markings, especially on the lateral parts.

Palpal organ (Fig. 1D-E). Embolus thinner than in other species, seminal duct meandering. Retro-

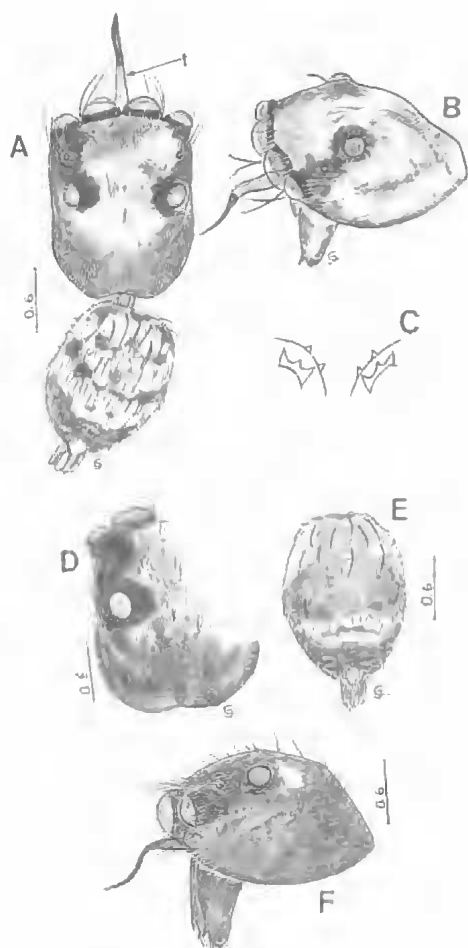


FIG. 4. *Thorelliola biapophysis* sp. nov., ♂♂. A-C, from Ambon; D-F, from Banda Islands. A-B, D-E, general views. C, cheliceral teeth.

lateral tibial apophysis rather slender, not furced. Prolateral tibial apophysis with robust spine.

Dimensions. CL 2.28, CW 1.80, CH 1.44, AL 2.16, AW 1.80, AEW 1.56, PEW 1.49, EFL 1.02.

Female. Cephalothorax (Fig. 2A-B, C-D) moderately tall, orange-brown, darker posteriorly, covered with fine, whitish hairs. Eyes surroundings black with fringes of fine, white hairs and long, brown bristles, especially above anterior eyes. Abdomen oval, shiny, anteriorly whitish-beige, posteriorly black-grey. Pattern of markings shows some variability (Fig. 2A, D), but three white spots on the posterior dorsal abdomen are always conspicuous. Spinnerets thin, whitish-grey, with paler tips. Clypeus (Fig. 2B, E) low,

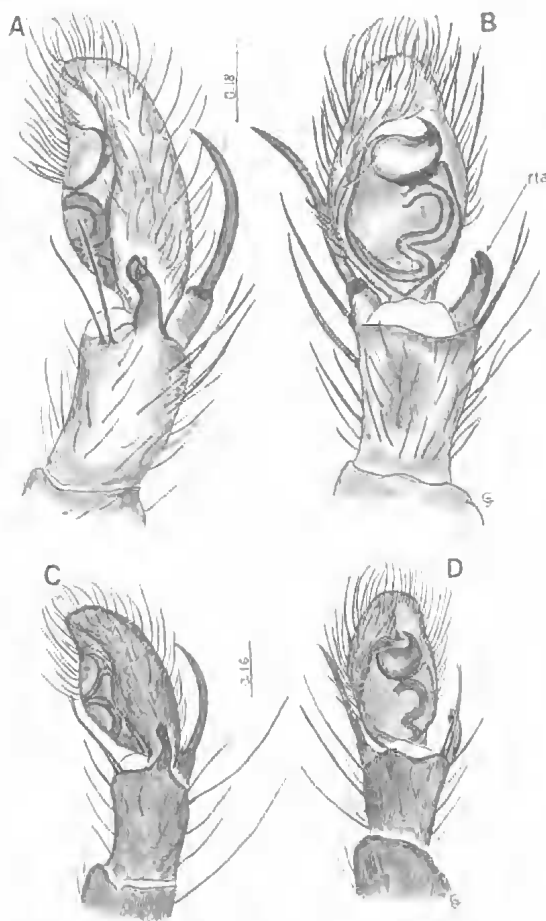


FIG. 5. *Thorelliola biapophysis* sp. nov., palpal organs, lateral and ventral views. A-B, from Ambon; C-D, from Banda Islands.

beige to brown, with two protruding setae — more delicate than in the ♂. Chelicerae (Fig. 2C, F) orange-brown, without lateral cusps. Maxillae and labium orange with paler tips. Sternum yellow, heart-shaped. Legs yellow-orange, darker distally, with some black markings. Venter whitish with a few black or whitish dots. Palps yellow. Epigyne (Fig. 3A-D) transverse oval, in comparison to the other species spermathecae more spherical.

Dimensions. CL 1.92, CW 1.53, CH 1.11, AL 2.16, AW 2.28, AEW 1.56, PEW 1.44, EFL 1.04.

DISTRIBUTION. Malaysia, Indonesia, Polynesia, Melanesia, Hawaii, Tahiti, Singapore.

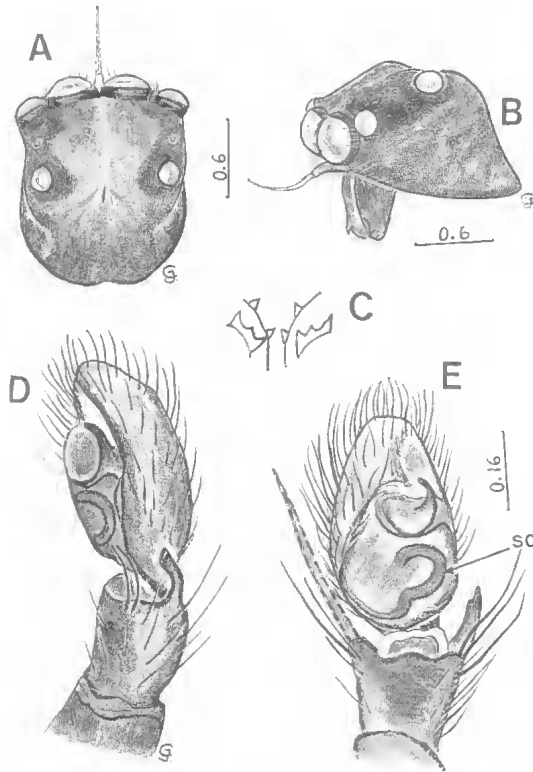


FIG. 6. *Thorelliola glabra* sp. nov., ♂ from Banda Islands. A-B, cephalothorax, dorsal and lateral views (horns on the tip of truncus reconstructed). C, cheliceral teeth. D-E, palpal organ, lateral and ventral views (pta with the reconstructed spine).

***Thorelliola biapophysis*
sp. nov. (Figs 4-5)**

MATERIAL EXAMINED. HOLOTYPE. QMS35299, ♂, Ambon: Hila, forest, from bark with ants, 29-31.01.95, C.L. Deeleman-Reinhold. PARATYPE. QMS35300, ♂, Banda Islands: Lonthoir, Namulu, 21.01.1995, C.L. Deeleman-Reinhold.

DIAGNOSIS. ♂♂ with the trunk on the clypeus; in comparison to *T. glabra*. and *T. truncilonga* truncus of the middle length. Posterior part of abdomen dark with one white spot in front of spinnerets.

DESCRIPTION. Male. Cephalothorax (Fig. 4A-B, D, F) moderately tall, brown-beige to brown, with scattered brown hairs. Surroundings of eyes black with fine whitish or brown hairs. Abdomen (Fig. 4A, E) nearly oval, covered with reflecting scales, yellow-whitish-black, with pattern of some dark spots and markings. One whitish spot in front of yellow-grey spinnerets. Clypeus low,

brown-grey to brown with trunk ended by two protruding horns. Chelicerae (Fig. 4C), maxillae and labium brown. Sternum heart-shaped, yellow, covered with fine, brown hairs. Legs yellow-brown, tarsi and metatarsi paler. Coxae I and II darker than the others. Venter pale grey.

Palpal organ (Fig. 5A-D). Embolus rather short and robust; retrolateral tibial apophysis wide, apically forked; two protruding setae near the retrolateral tibial apophysis. Prolateral tibial apophysis slightly dislocated dorso-laterally.

Dimensions. CL 1.85, CW 1.35, CH 1.06, AL 1.45, AW 1.20, AEW 1.44, PEW 1.27, EFL 0.98.

Female unknown.

DISTRIBUTION. Ambon, Banda Islands.

ETYMOLOGY. From the structure of retrolateral tibial apophysis, which is divided apically.

***Thorelliola glabra* sp. nov.
(Fig. 6)**

MATERIAL EXAMINED. HOLOTYPE. QMS35301, ♂, Banda Islands, Moluccas, Neira, 02.1995, C.L. Deeleman-Reinhold.

COMPARISON. Differs from *T. biapophysis* by the course of seminal duct, trunk shorter.

DESCRIPTION. Male. Cephalothorax (Fig. 6A-B) tall, brown; scarce hairs only around the anterior eyes; eyes surroundings black. Abdomen missing. Clypeus low, brown; trunk rather short. Chelicerae (Fig. 6C), maxillae and labium brown.

Palpal organ (Fig. 6D-E). The course of seminal duct similar to the upturned figure 3.

Dimensions. CL 1.80, CW 1.38, CH 1.08, AEW 1.40, PEW 1.25, EFL 0.96.

Female unknown.

DISTRIBUTION. Banda Islands.

ETYMOLOGY. From the Latin word *glabrus* = smooth.

***Thorelliola javaensis* sp. nov.
(Figs 7-8)**

MATERIAL EXAMINED. HOLOTYPE. QMS35302, ♂, Java: Cibodas National Park, 1450m, from leaves, 10.12.1986, Suharto Djojosudharmo. ALLOTYPE. QMS35303, ♀, same data. PARATYPES. QMS35304, ♂, 7 ♀, same data.

DIAGNOSIS. Dark brown stripes on the cephalothorax. Embolus in palpal organ (Fig. 7F-G) longer and thin, seminal duct not meandering; no

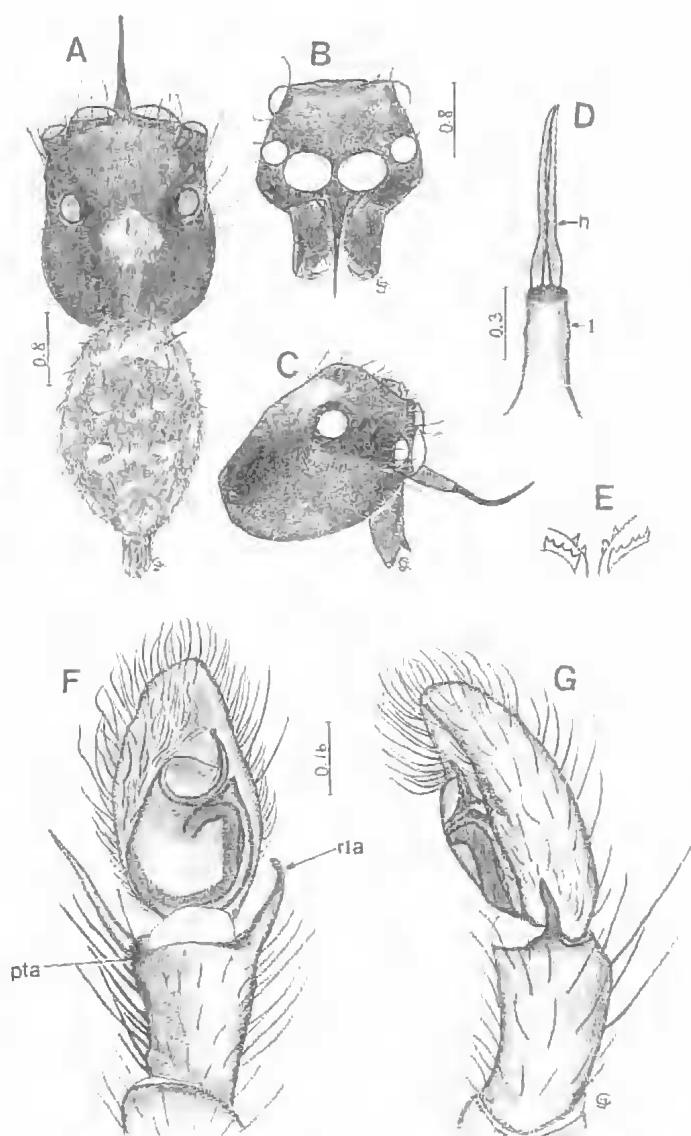


FIG. 7. *Thorelliola javaensis* sp. nov., ♂ from Java. A-C, general views. D, truncus. E, cheliceral teeth. F-G, palpal organ, ventral and lateral views.

bristles near the retrolateral tibial apophysis, the latter is slender and not furced apically. Spermathecae of different shape (Fig. 8E-F).

DESCRIPTION. Male. Cephalothorax (Fig. 7A-C) tall, brown-beige in the eye field and yellow around fovea, with two thoracic stripes. Surroundings of eyes black. Abdomen (Fig. 7A) grey-beige with some darker spots and dots. Spin-

nerets dark grey, with lighter tips. Clypeus (Fig. 7B) very low, brown, with the trunk (Fig. 7D) ended by two long horns. Chelicerae (Fig. 7E) brown; maxillae and labium orange with paler tips. Sternum heart-shaped with brown margins and covered with brown, short hairs. Legs I brown, darker and more robust than the others; tarsi yellow. Venter grey, with no spots.

Palpal organ (Fig. 7F-G). Embolus rather thin; seminal duct non-meandering; retrolateral tibial apophysis rather slender and slightly bended apically; prolateral tibial apophysis short, with the robust spine.

Dimensions. CL 2.04, CW 1.68, CH 1.32, AL 2.28, AW 1.44, AEW 1.68, PEW 1.50, EFL 1.08.

Female. Cephalothorax (Fig. 8A-C) tall, yellow-beige, with two distinctive, brown stripes, generally paler than that in the ♂. Surroundings of eyes dark brown. Eye field covered with the fine, white hairs. Abdomen near oval, of the similar colour pattern as in ♂, but a little darker. Spinnerets yellow-grey. Clypeus (Fig. 8C) rather low, orange, with two protruding central setae. Chelicerae (Fig. 8D), maxillae and labium orange. Sternum pale yellow, covered with fine, brown, hairs. Legs yellow, with dark grey markings, especially near the joints. Palps yellow-beige. Venter pale grey.

Epigyne (Fig. 8E-F). Spermathecae less spherical than in other species, with different shape of fertilization ducts (Fig. 8F).

Dimensions. CL 1.94, CW 1.45, CH 1.14, AL 2.33, AW 1.78, AEW 1.51, PEW 1.36, EFL 0.90.

DISTRIBUTION. Java; Cibodas N.P.

ETYMOLOGY. From the locality.

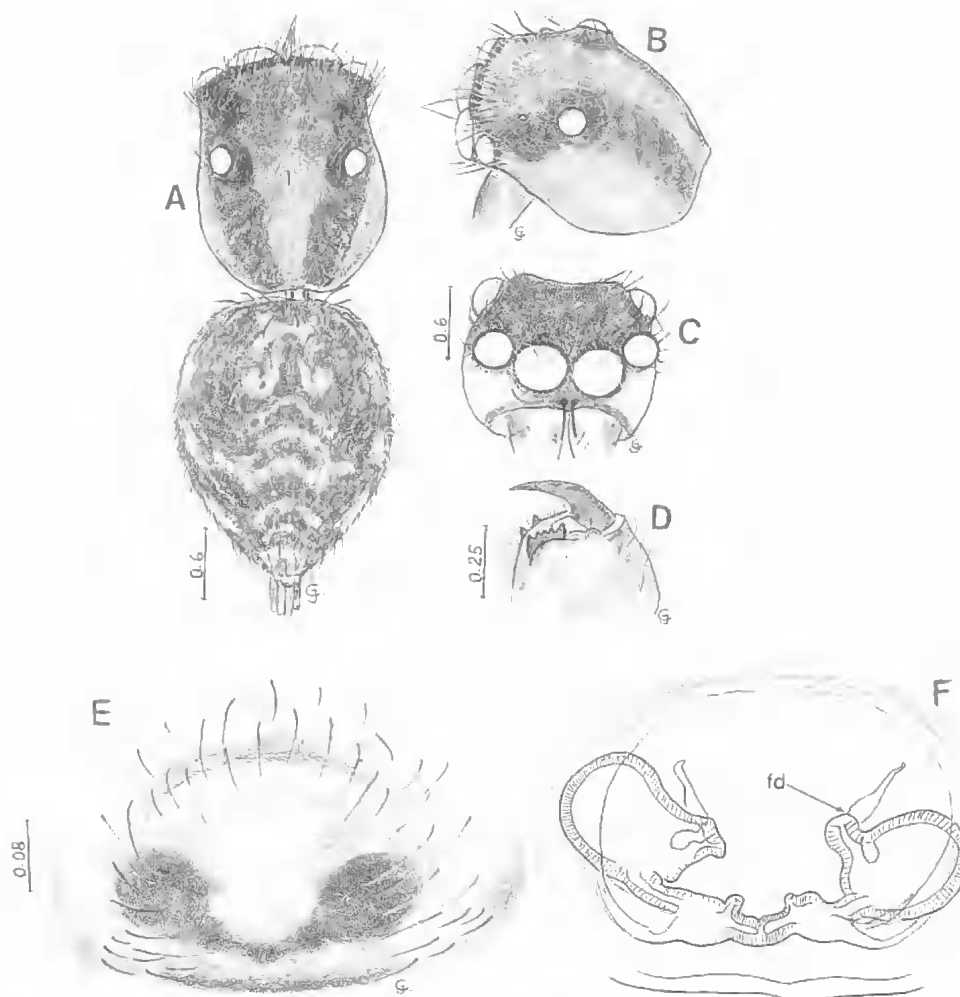


FIG. 8. *Thorelliola javaensis* sp. nov., ♀ from Java. A-C, general views. D, cheliceral teeth. E-F, epigyne and its internal structures.

***Thorelliola truncilonga* sp. nov.**
(Figs 9-10)

MATERIAL EXAMINED. HOLOTYPE. QMS29963, ♂, Papua New Guinea, Central Province, National Capital District, House Pomims, (possibly escaped from Yule Islands' litter), left palp missing, 20.08.1985, D.J. Court. ALLOTYPE. QMS29964, ♀, Port Moresby, Botanic Garden, on foliage, 28.06.1988, D.J. Court.

DIAGNOSIS. Male truncus long and robust, ended by two short setae. Prolateral tibial apophysis short and with no spines. Shape of spermathecae and course of insemination ducts different than in other species.

DESCRIPTION. Male. Cephalothorax (Fig. 9A-B) tall, orange-brown, darker posteriorly. Eyes surroundings black, covered with brown hairs. Abdomen oval, orange-black, with a pattern of dark brown and grey spots. One white spot in front of the spinnerets. Spinnerets yellow, with brown markings laterally. Clypeus (Fig. 9B) rather low, brown, with sparse, brown bristles and a massive trunk ended by two protruding, but short horns. Chelicerae (Fig. 9C), maxillae and labium brown with lighter tips. Sternum broad and yellow. Legs brown-orange, covered with brown hairs, more numerous distally. Venter yellow-grey with some small greyish lateral spots.

Palpal organ (Fig. 9D-F). Embolus more robust than in the other species; prolateral tibial apoph-

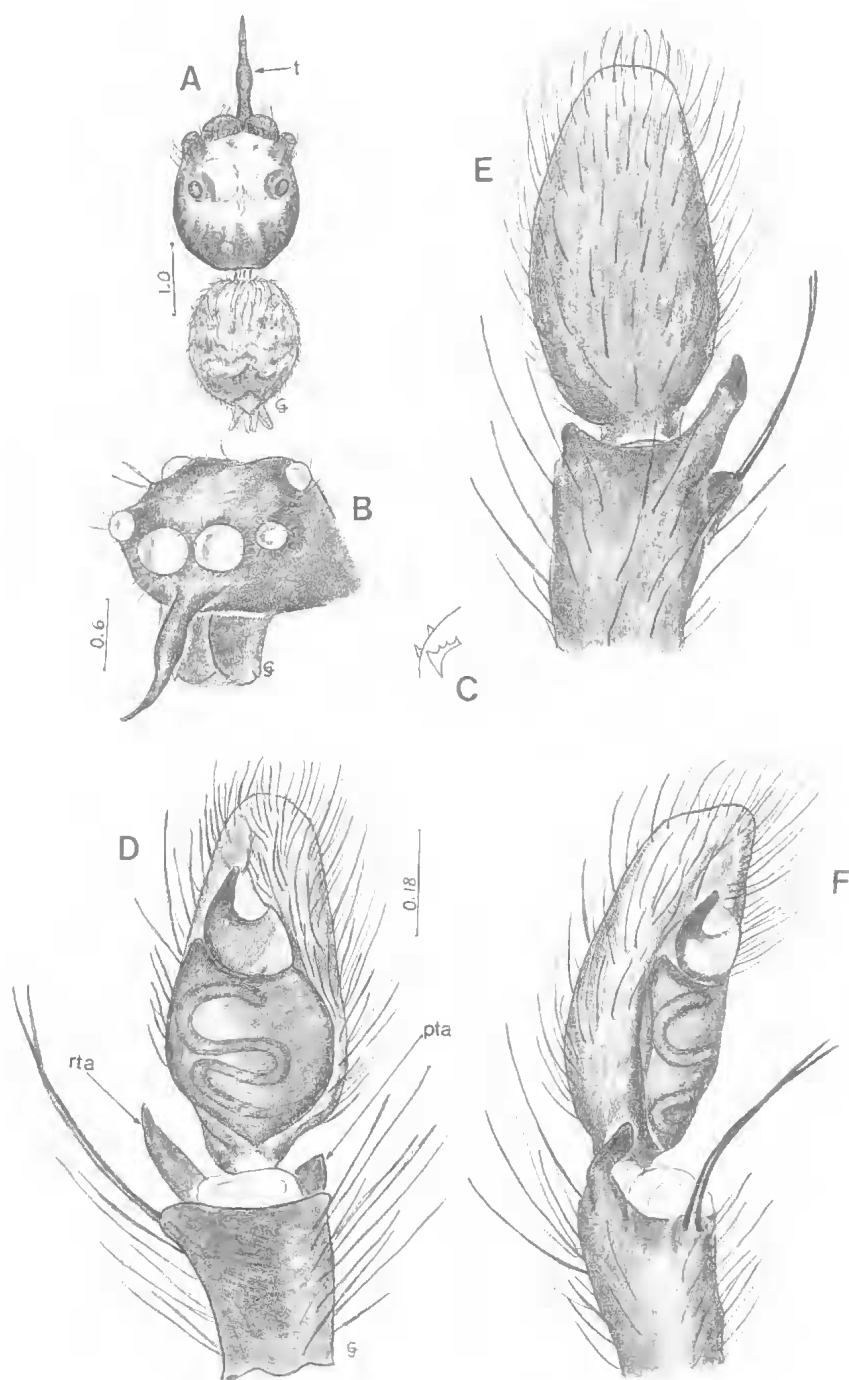


FIG. 9. *Thorelliola truncilonga* sp. nov., ♂ from Papua New Guinea. A-B, general views. C, cheliceral teeth. D-F, palpal organ, ventral, dorsal and lateral views.

ysis short, with no spines; near the retrolateral tibial apophysis — an appendix with two long spines.

Dimensions. CL 2.40, CW 2.10, CH 1.45, AL 2.05, AW 1.70, AEW 1.80, PEW 1.70, EFL 1.02.

Female. Cephalothorax (Fig. 10A-B) tall, yellow-beige with dark brown markings. Surroundings of eyes black, covered with sparse, stiff brown hairs. Abdomen (Fig. 10A) oval, yellow-beige, with the pattern of grey and black triangle-like markings and with scattered brown hairs. Spinnerets yellow-grey. Clypeus pale yellow with sparse amber bristles. Chelicerae (Fig. 10C) yellow orange. Maxillae and labium similar in colour, with darker tips. Stemum pale yellow. Legs yellow with brown markings, especially around joints. Venter pale yellow, with small dark brown spots laterally.

Epigyne (Fig. 10D-E).

Dimensions. CL 1.80, CW 1.40, CH 1.16, AL 1.60, AW 1.45, PEW 1.25, AEW 1.35, EFL 0.90.

DISTRIBUTION. Papua New Guinea: Port Moresby.

ETYMOLOGY. From the structure of the trunk.

ACKNOWLEDGEMENTS

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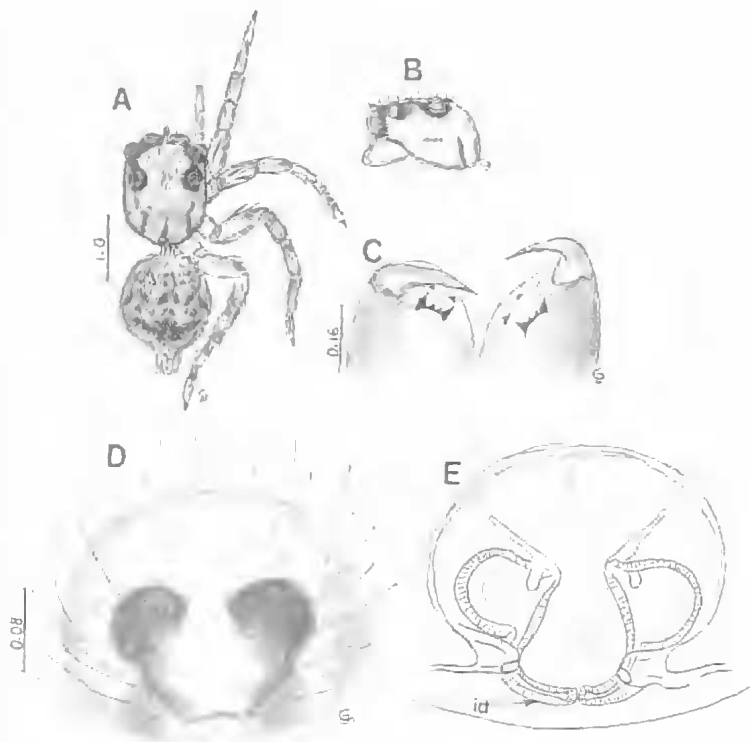


FIG. 10. *Thorelliola truncilonga* sp. nov., ♀ from Papua New Guinea. A-B, general views. C, cheliceral teeth. D-E, epigyne and its internal structures.